"WARNING: TO PREVENT FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

Technics
by Panasonic

DIRECT DRIVE PLAYER SYSTEM

SL-1100
SL-110

OPERATING INSTRUCTIONS

NOTICE

We changed the color of the cartridge shell to black because of many audiophile's request. This instruction book shows the former color,please give us your forgiveness.

Read these instructions completely, before operating this set.

This instruction manual covers both SL-1100 and SL-110.

The SL-110 is same with SL-1100 in every aspects, but comes only without tonearm section.

We want to thank you for selecting the DIRECT DRIVE PLAYER SYSTEM.
To receive optimum performance from this set we recommend that you read these operating instructions carefully.

PARTS IDENTIFICATION
OPERATION AND FUNCTION OF CONTROLS
(TURNTABLE SECTION)

❶ROTOR (See Fig.1- ❶)
This unit uses a direct drive motor. Therefore, the rotor, which is the rotating part of the motor, is connected directly to the turntable platter. The spindle of the motor and the shaft of the turntable platter are the same. For this reason, to maintain the high performance described in the specifications, it is not desirable to apply a large amount of external force to the rotor and the spindle of the motor. The rotor is, therefore, clamped securely to protect the delicate and important parts during transportation.
Be sure to remove these fittings Ⓐ carefully, and save them for future use, as when, for example, the player must again be transported.

NOTE

The rotor of the motor is constructed so that it cannot be removed in order to maintain its high performance for a long time.
Do not attempt to remove the removal prevention fitting Ⓑ for the rotor.

❷PILOT LAMP (See Fig.1- ❷)

❸POWER SWITCH/SPEED SELECTOR (See Fig.1- ❸)
Set the "speed selector" to the desired position (33 or 45, depending upon the speed of the record to be played). The pilot lamp will be lighted. The turntable platter will not rotate unless you push the "START" button.

❹START BUTTON (See Fig.1- ❹)
Push the "START" button and the turntable platter will rotate.
Starting rotation power is large with complete stability of speed reached within one-half rotation at 33-1/3 r.p.m.

❺STOP BUTTON (See Fig.1- ❺)
Push the "STOP" button when you want to stop the rotation. The turntable platter will continue to rotate for a short time because of its large inertial force.

❻VARIABLE PITCH CONTROLS (See Fig.1- ❻)
Adjust the "variable pitch controls" if necessary. These are designed to provide adjustment of the selected speed by 10% range.
Select the speed of the turntable platter by setting the "speed selector" to the desired position. The rotating turntable platter when illuminated by conventional fluorescent lamp or by neon lamp may show movement of the marks on the strobo disc, if so, adjust the "variable pitch controls" until the strobo marks are stationary.
After the necessary adjustment has been made, the speed will not change and re-adjustment will not be necessary.
The strobo marks molded around the turntable platter are used to check the correct speed of rotation for 50 Hz (European), and 60 Hz (U.S.A.). Adjust its rotation according to the strobo label.

❼STROBO MARKS (See Fig.1- ❼)

❽STROBO LABEL (See Fig.1- ❽)

❾SPEED ADJUSTMENT SCREWS (See Fig.1- ❾)
If, for any reason, the adjustment cannot be successfully made, use a (–) tip screwdriver to adjust the appropriate speed adjustment screws (33 or 45) located beneath the turntable platter.
Turning the speed adjustment screws to the right or left will increase or decrease the speed respectively.

❿AC OUTLET Ⓐ (See Fig.1- ❿)
This one is designed with a view to future use, that is for your special convenience such as for neon lamp or stylus illumination light.

⓫SPECIAL OIL (See Fig.1- ⓫)
The bearing parts of this set are designed with an ultra-prescise finish to prevent the generation of "Wow and Flutter".
A special oil has been used to maintain the high-performance efficiency of this set by forming a uniform film of oil over the parts. For this reason, use only the oil included with this set for its lubrication.
Even if there is oil leakage around the oil hole or the rotor, caused during transportation, it will not effect the performance.
Before use, apply about 2 drops of oil into the oil hole.
To lubricate, open the tip of the vessel with a needle. After lubricating, cover the vessel with the cap to prevent the leakage of oil.
Never use any other type of oil. To lubricate, remove the turntable platter and apply about 2 drops of oil into the oil hole.
It is sufficient to lubricate the set once after approximately 2,000 hours of use.
Two thousand hours are equivalent to 5-1/2 years, if the set is used one hour a day, or to 8 months if used 8 hours a day.
This period is much longer than has been necessary on previous, conventional motors. Do not apply too much oil, nor more often than necessary.

⓬OIL HOLE (See Fig.1- ⓬)

⓭OUTPUT TERMINALS (See Fig.1- ⓭, Fig.3- ⓭)
Connect the pickup cords from the arm panel to the output terminals.

RED (R)	→	R Channel
WHITE (L)	→	L Channel
BLACK (U shaped)	→ E or GND	(Pickup Earth)

⓮SCREW HOLES (FOR ARM PANEL) (See Fig.1- ⓮)

⓯TURNTABLE MAT (See Fig.1- ⓯)

⓰TURNTABLE PLATTER (See Fig.1- ⓰)
The turntable platter is a 35cm (13-25/32") ultra-large diameter 2kg (4.4 lb) weight and has inertial moment of 320kg-cm^2 (109.5 lb-in^2). Each turntable platter is dynamically balanced.

⓱PLAYER CABINET (See Fig.2- ⓱)

⓲BOTTOM COVER (See Fig.2- ⓲)

⓳AUDIO-INSULATED LEGS (See Fig.2- ⓳)
The audio-insulated legs are designed to eliminate vibration entirely by using special materials inside them. Adjust the height and level of the player system by turning the legs.

⓴OUTPUT TERMINALS (See Fig.2- ⓴)
Connect the pickup cords provided in this set to the player output terminals and connect the same channel to the amplifier.

R (RED)	→	R Channel
L (WHITE)	→	L Channel
E (U shaped)	→	E or GND

㉑AC OUTLET Ⓑ (See Fig.2- ㉑)

㉒AC POWER CORD (See Fig.1- ㉒)

㉓DUST COVER (See Fig.1- ㉓)

㉔TONEARM (See Fig.2- ㉔ , Fig.3)

High quality universal tonearm is designed especially for direct drive player system. Most remarkable features of this tonearm are easy operation, durable structure and automatic reset mechanism of stylus pressure control. Therefore, adjustment of zero balance and stylus pressure can be easily and rapidly accomplished.

(TONEARM SECTION)

㉕HEAD SHELL (See Fig.3- ㉕ , Fig.4)

Insert the head shell in the end of the tonearm, and secure firmly by turning the locking nut of the tonearm in the direction of the arrow, as shown in the picture. Be sure to connect the lead wires to the cartridge terminals according to the instructions included with the cartridge. The cartridge should be inserted in the head shell so that the spacing between the stylus tip and the plug is 52mm (2-1/16") as shown in the picture.

㉖LOCKING NUT (See Fig.3- ㉖)

㉗ANTI-SKATING FORCE DEVICE (See Fig.3- ㉗ , Fig.5)

Skating force is that frictional force caused by contact between the tip of the stylus and the record groove, and is applied to the stylus as a side pressure depending upon the relationship of the geometrical position of the tonearm.

This force results in an unbalance of the contact pressure between the stylus tip and each groove wall of the record, an increase of distortion a deterioration of the performance, a decrease of separation characteristics and abnormal wear of the stylus tip and the record grooves. For this reason, it is necessary to compensate this skating force.

The anti-skating force mechanism performs this compensation function. The quantity of anti-skating force is in proportion to the stylus pressure and, therefore, it should be adjusted according to the stylus pressure. Turn the adjustment knob, as shown in the picture, to the same number as stylus pressure scale indicates.

㉘BALANCE WEIGHT (See Fig.3- ㉘ , Fig.5)

This balance weight is especially designed for easy adjustment of zero balance.

In addition, all functions are built-in on the upside of the tonearm such as anti-skating force control and stylus pressure control, therefore, operation is easy, Install the balance weight, which is packed in the parts box, on the rear of the tonearm.

By turning the stylus pressure knob to the arrow, as shown in the picture, adjust the zero balance. (that is floating the tonearm free.) After adjustment, pull the outside of the stylus pressure knob in the direction of the arrow, then the scale will be reset automatically to the zero position.

Adjust the stylus pressure by turning the stylus pressure knob to the arrow in the picture according to the stylus pressure of the cartridge which you use.

If the cartridge weight is beyond 9.5g, use the auxiliary weight, then the tonearm accepts any cartridge whose weight is from 9 to 15.5g.

㉙ARM BASE (See Fig.2- ㉙)

If it is necessary to adjust the height of the tonearm, loosen two screws and move the tonearm up or down.

㉚CUEING LEVER (See Fig.3- ㉚)

After separating the tonearm from the arm rest, and then moving the cueing lever toward Ⓐ▼ position (as shown in the picture), the tonearm will raise. Hold the tonearm and place the tip of the stylus above the groove of the record from which you desire to play. When the cueing lever is moved to the Ⓑ▼ position, the tone arm will descend slowly and the performance will begin.

㉛ARM LIFT (See Fig.3- ㉛)

㉜ARM REST (See Fig.3- ㉜)

㉝ARM PANEL (See Fig.3- ㉝)

SPECIFICATIONS

(TURNTABLE SECTION)

Type	Direct drive player system
Turntable platter	Aluminium die-cast; 35cm (13-25/32") diameter 320 kg-cm² (109.5 lb-in²) inertial moment, 2 kg (4.4 lb) weight
Turntable speeds	33-1/3 and 45 r.p.m.
Motor	20 - 15 poles ultra low-speed electronically commutated brushless DC motor
Power supply	AC 120V 60Hz,
Power change method	4W
Speed change method	Electronic change
Variable pitch control	Individual adjustment by variable resistor, 10% adjustment range
Wow and flutter	0.03% WRMS
Rumble	–50 dB (DIN A) –70 dB (DIN B)
Build-up time	1/2 rotation at 33-1/3 r.p.m.
Dimensions	51.0 x 39.0,x 19.5 cm (W x D x H) (20-1/16" x 15-3/8" x 7-11/16")
Weight	13.0 kg (28.7 lb) with dust cover

(TONEARM SECTION)

Type	EPA-110 Directly reading stylus pressure adjustment, static-balance type, universal head shell, anti-skating force device
Effective length	235 mm (9-1/4")
Overhang	14mm (9/16")
Tracking error angle	Within ± 1.75°
Stylus pressure	0 – 5 g

Specifications, designs and other details are subject to change, without prior notice.

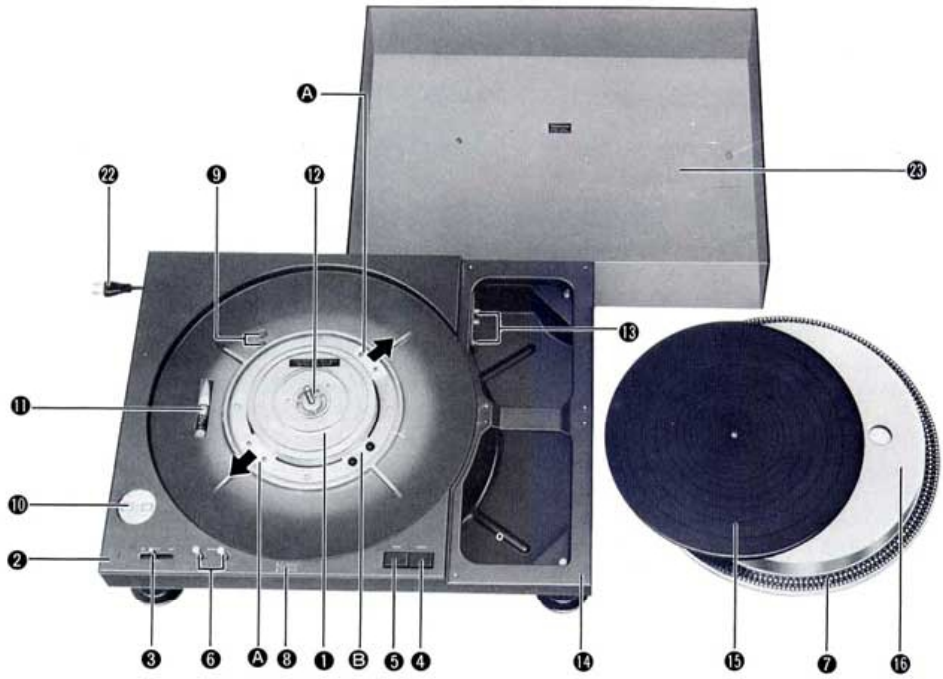

Fig 1

Fig 2

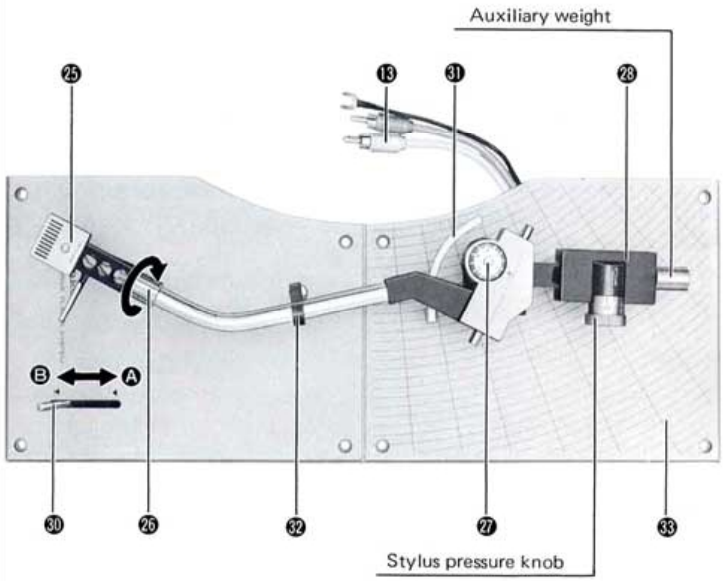

Fig 3

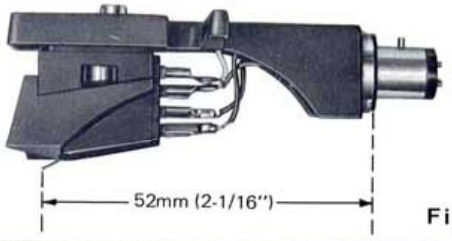

Fig 4

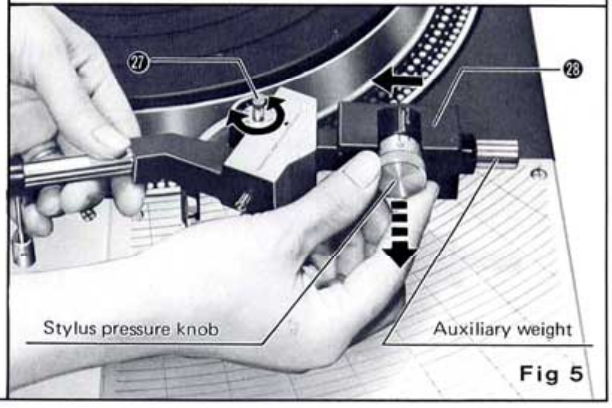

Fig 5

FEATURES
(TURNTABLE SECTION)

❶35 CM (13-25/32") ULTRA-LARGE DIAMETER TURNTABLE PLATER

35cm (13-25/32") ultra-large diameter, and 2kg (4.4 lb) heavy weight turntable platter has an inertial moment of 320 kg-cm^2 (109.5 lb-in^2) and the turntable platter has been dynamically balanced.
Around the turntable platter are strobo marks which are used to check its speed.

❷DIRECT DRIVE MOTOR

There is no "wow" or "flutter" caused by transmission mechanism. There is no vibration because this motor has no high-speed rotation mechanism. The rumble is extremely low.

❸ELECTRONIC COMMUTATOR BRUSHLESS DC MOTOR

The DC motor is not affected by fluctuations of the power supply frequency. Starting rotation power is large, with complete stability of speed reached within one-half rotation at 33-1/3 r.p.m. Since there is no electro-magnetic hum, the signal to noise ratio (rumble) is excellent. And, because the motor includes an electronic commutator, starting is perfectly accurate, There is, therefore, no speed instability or brush deterioration as is often noted in brush commutators, no pulse noise generated by brush sparking and no sound caused by rubbing of brushes.

❹ROTATION OF THE TURNTABLE PLATTER CAN BE STOPPED AT ANY TIME

This is a feature which is not found in players which have speed reduction and transmissions devices such as a belt or idler.
If such stopping is attempted on ordinary players, the belt or idler will soon deteriorate and efficiency soon becomes poor. In this player system, such stopping causes no problem other than a slight increase of the motor current, which is not really a problem.

❺ELECTRONIC STABILIZATION CONTROL

Because this set includes special circuitry to stabilize the speed electrically, speed stability is extremely good.

❻ELECTRICAL SPEED CHANGE

There is no mechanism to change the position of the belt or idler. There is, therefore, no "wow" or unwanted speed change.

❼NO EFFECT FROM FLUCTUATIONS OF POWER SUPPLY FREQUENCY OR VOLTAGE

Since the motor is the DC type, the rotation speed does not depend on the power supply frequency. And, because a DC-stabilizer is used, the set is not affected by changes of the power supply voltage, even if the fluctuation is large.

❽SEMI-PERMANENT HIGH PERFORMANCE

Unlike previous players, there is no reduction or transmission mechanism, such as a belt or idler.
The motor rotates the turntable platter directly, at an ultar-low speed. Wear of parts is therefore, reduced to the extreme minimum and high-performance efficiency can be maintained semi-permanently.

❾POWER CONSUMPTION IS 1/100TH THAT OF ORDINARY MOTORS

Motor power consumption is only 0.1W, which is less than 1/100th that of a conventional AC motor. (There is a power consumption of about 4W, in addition to the drive, on other electronic circuitry).

(TONEARM SECTION)

❶DETACHABLE ARM PANEL

Arm panel can be detached by unscrewing just in case you might decide to change the tonearm.

❷EASY BALANCING AND STYLUS PRESSURE CONTROL

By a smooth rack-and-pinion type movement, the balance weight can be adjusted easily. After adjusting the balance, pull the outside of the stulys pressure knob outward, and the scale will be reset automatically to the zero position. Now you can add the amount of stylus pressure you desire by directly reading the scale.

❸FEATURE-TOUCH CUEING

Feather-touch cueing is viscous-damped in both directions for gentle decent and ascent. The tonearm will be set down exactly on the spot you desire.

PLACEMENT OF PLAYER

❶ Use the player system in a stable and horizontal position, where there is little or no vibration.

❷ Use the player system as far away from the speakers as possible and isolate the player system from sound radiation from them.

❸ Avoid placing the player excessively hot or cold places, particularly near heaters.

AUXILIARY PARTS

- DUST COVER ..... ❶
- PICKUP CORDS ..... ❶
- (–) TIP DRIVER ..... ❶
- ADAPTOR ..... ❶
- SPECIAL OIL ..... ❶
- SCREWS (for cartridge) ❹
- AUXILIARY WEIGHT .. ❶

Panasonic Company
Division of Matsushita Electric
Corporation of America
One Panasonic Way, Secaucus,
New Jersey 07094

Matsushita Electric of Hawaii, Inc.
320 Waiakamilo Road, Honolulu,
Hawaii 96817

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